Military in Politics and Budgetary Allocations

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Abstract

This paper investigates the effect of military involvement in politics on budgetary allocations for defence. We employ a variety of econometric models, including pooled OLS and panel data with fixed effects and control for other known determinants of military spending. To deal with endogeneity issues, we also use an IV methodology and find that a higher degree of military involvement in policy-making increases the probability that the military obtain a larger share of output.

Keywords: Military in Politics, Military Expenditure, IV Estimates

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1 Introduction

Following the so-called “Arab Spring", a revolutionary wave of protests and disorders across the Arab world in 2011, scholarly research on civil-military relations has become one of the fastest growing areas in economics and political science. This paper explores an important yet overlooked facet of the civilian oversight of the armed forces, the relation between budgetary allocations for defence and the military involvement in politics.

Military spending is a sensitive economic issue and its impact on economic growth, development, international debt, corruption, and on the risk of armed conflict have been extensively explored by a number of scholars (e.g. Gupta *et al.*, 2001; Dunne *et al.*, 2005; Collier & Hoeffler, 2006; Aizenman & Glick, 2006; Lin & Ali, 2009; Pieroni, 2009; Smyth & Narayan, 2009; Heo, 2010; Dunne & Smith, 2010; Alptekin & Levine, 2011; Kollias & Paleologou, 2013). Given the considerable amount of variation in military spending across countries and over time, another important research area is on the factors determining the demand for military spending (i.e. what a country wants in terms of troops and equipment). A country's economic wealth, political systems, armed conflicts and the military expenditure of neighbours and rivals are usually found to affect defence spending (see e.g. Dunne & Perlo-Freeman, 2003b; Goldsmith, 2003; Dunne *et al.*, 2008; Nordhaus *et al.*, 2012).

While economic and international determinants have been widely explored by this burgeoning literature, none of the above accounts explains the influence of institutional actors in allocative decisions, in particular whether

and to what extent the role of the military in domestic policy-making affects patterns of defence spending.[1] We anticipate that not only the armed forces are central in bringing about institutional change, as the recent events in Egypt in 2013 suggest, but the extent to which they intervene in politics is one of the key dimensions along which military spending differs across countries.

Most of the existing literature on the political determinants of defence spending focuses on differences between democracies and autocracies and finds that autocracies devote more of their economic resources to military spending than do democratic systems (e.g. Hewitt, 1992; Goldsmith, 2003). In a novel work, Albalate *et al.* (2012) find that presidential democracies spend more than parliamentary systems on defence, whereas its interaction with a majoritarian electoral rule reduces the defence burden. Their results are consistent with Linz's (1990) theory: the armed forces can act as a leveraging power in situations of institutional conflicts between the president and the parliament. If the military is capable of exerting this influence, this should be mirrored by higher defence burdens (see Albalate *et al.*, 2012, p.288). In this article, we further explore to what extent military influence over the decision-making process has consequences for the allocation of resources and the level of budgetary support acquired by the military.

Coups d'état, which are usually followed by the installation of a military regime, are the primary way by which the military exerts its institutional influence. Yet, in most cases the political role assumed by the military fits

[1]The strength and nature of the Defense Industrial Base (i.e. the military-industrial complex) and the degree of involvement of members of the military in its board, is another crucial aspect connected to the level of military involvement in politics.

more easily along a continuum rather than within clearly distinct boxes. Several civilian nondemocratic regimes survive with the external support of the military, and even consolidated democracies where civilian control of the military is the norm are not immune from a degree of military influence. By explicitly taking this factor into account, we consider more subtle linkages between the political influence exerted by the military and the amount of resources diverted to their apparatus. We use the International Country Risk Guide (ICRG) system (Howell, 2011), a model for forecasting financial, economic, and political risk. In particular, we look at one subcomponent of the political risk, "military in politics", which measures the military participation in government on a six-point scale. This scale can be used as a barometer of the extent to which civilian political institutions are penetrated by military personnel, factions and interests.

To asses the impact of military in politics on budgetary decisions, we use a large panel of 135 countries for the period 1984-2009 and include a variety of model specifications to deal with the presence of correlation within countries, time-invariant unobservable confounders and endogeneity concerns. We begin Section 2 with a short discussion on how characteristics of civilian-military relations may account for the relative power of military institutions to extract budgetary resources from the state. Section 3 discusses the data and the panel data methodology, while section 4 presents our empirical results from pooled and fixed-effect models as well as instrumental variable (IV) estimators. Section 5 provides concluding remarks.

2 The Demand for Military Spending

Models of military spending typically show that a country's defence budget is significantly affected by the security environment, including the military expenditure of allies, rivals and potential enemies (see Smith, 2009, for an extensive review). While external factors are certainly important, domestic institutional factors should also hold explanatory power. In fact, constitutional systems and electoral rules have important implications for the size of the government and economic policies (Persson *et al.*, 2000, 2007) and affect military spending (Albalate *et al.*, 2012).

We argue that civilian-military relation peculiar to a country is conducive to a specific degree of military involvement in politics which, in turn, affects the level of defence spending. We do not neglect other important reasons for arming, but accept that the military has good motives for acquiring more resources, from rent seeking to the pursue of status and prestige of the armed forces within a society. In particular, as Allison & Halperin (1972) put it, career officials believe that the health of their organization is vital to the national interest and depends on securing the necessary capabilities, leading to attempts to maintain or increase the budget. This is particularly relevant since the end of the WWII, when the increasing sophistication of military capabilities has made the guidance of military officials essential to policy-makers. Military leaders have become important provisioners of expertise on matters of security and budgeting (Flynn, 2013). While in theory when an optimal level of military burden is achieved, the marginal security benefit of an additional unit of spending is equal to its opportunity cost, in prac-

tice the calculation is complex given the inherent uncertainties associated with the assessment of security needs and the presence of competing interest groups such as the arms manufacturers and the military. These groups have their own interests in higher military expenditure and may therefore present the threats "as more pressing than they are" (Smith, 2009, p.88). In fact, according to the bureaucratic politics theory (e.g. Halperin & Clapp, 2006), policy is the product of interactions between several different individual actors. The position that each actor holds, which depends on an actor's stance vis-a-vis other agencies and interests, determines his power to shape the policy-making process. This theory predicts that all bureaucratic organizations should be subject to this kind of wrangling over resources, and "the military in particular provides an excellent test subject given its emphasis on rank, structure, and hierarchy" (Flynn, 2013, p.6). The military must compete with other interests in a budget game in which all actors, including the civilian bureaucracy, will attempt to increase their budget. Often cuts in military expenditure are driven by financial crises or other budgetary priorities and "armed forces tend to hate Ministries of Finance more than their notional enemies" (Smith, 2009, p.99). The ability of the military to control information, the frequency with which higher-ranking officers interact with civilian policymakers and the extent to which the military manages to advance the interests of their organization depend on their degree of involvement in policymaking. Higher levels of military involvement in politics should influence their relative bargaining power, and shape the portion of public resources between military and non-military interests.

Empirical research has never identified patterns of military burden across

different levels of military involvement in politics.[2] Although various attempts have been made to identify military intervention in politics, including seminal works of Huntington (1957), Janowitz (1964) and Grindle (1987), military intervention on domestic politics is not an either/nor dichotomy. Soldiers have some influence in all regimes and repeatedly intervene in the politics of some countries, and the degree they remain under civilian control vary enormously across countries and over time (see e.g. Looney, 1988; Pion-Berlin, 1992; Bove & Brauner, 2011).

Moreover, much of the academic literature on civil-military relations focuses on autocracies. Bove & Brauner (2011) and Kim *et al.* (2013) find that military regimes spend more on the military than other authoritarian regimes. Yet, the extent to which the military apparatus influences defence expenditure varies across democracies as well. Since defence policies and budgetary decisions involve complex military-technical issues, the balance between democratic control of defence policies including the budget on one hand, and sensible deference to military expertise on the other is often problematic in practice (Cottey *et al.*, 2002). Dimitrov (1999) investigates whether civilian political leaders or the military had the last word on defence budgeting in Bulgaria. Bacevich & Bacevich (2002) show how, since the end of World War II, the American military has had an increasingly prominent role in the policy-making process of the U.S. Rhodes (1994) and Nagel (2002), among others, explore the influence of military leaders in the

[2]There is a number of qualitative case studies on the relationship between the role of military elite in politics and corruption in defence procurement. Majeed & Macdonald (2010) collect anecdotal evidence from country level analyses and find empirical support for a positive relation between military in politics and corruption.

policy-making process and the competition between military leaders over resources. Finally, Flynn (2013) finds that military leaders occupying key positions can influence defence spending priorities in favour of their respective branches.

Any qualitative distinction requires subjective calls. To provide a more systematic way of ranking the degree of military involvement in politics, we use a six-point scale of the power of the military in relation to the civilian authority. We focus on a large sample of 135 countries in the period 1984-2009 and use a variety of econometric techniques, the issue considered next.

3 Data and Empirical Strategy

The data on the level of military in politics come from International Country Risk Guide (ICRG) rating, which comprises 22 variables in three subcategories of risk (political, financial, and economic) from 1984 to 2009. Our variable of interest is "military in politics", and ranges from 0 to 6, where lower risk ratings indicate "a greater degree of military participation in politics and a higher level of political risk". The classification is made on the basis of subjective estimates of the level of military influence in the decision-making of the government. To ensure consistency, both between countries and over time, points are assigned by ICRG editors on the basis of a series of pre-set questions. Other ICRG risk subcomponents, ranging from bureaucratic quality to rule of law to corruption indexes, have been extensively employed in many studies in economics and finance (e.g. Sachs & Warner, 1997; Jappelli & Pagano, 2002; Pinkowitz *et al.*, 2006) as well as in semi-

nal works on institutions and economic development (e.g. Knack & Keefer, 1995; Hall & Jones, 1999; Acemoglu *et al.*, 2001, 2002). To facilitate the interpretation of the coefficient of military in politics in the empirical analysis, we reverse its original value; therefore, higher values denote higher levels of military involvement.[3]

Data on military spending are assembled from two different sources. Following Nordhaus *et al.* (2012), we use the Correlates of War (COW) National Material Capabilities up to 1987 and SIPRI data from 1988 to 2009 (the latter are only available from 1988). COW data are in current USD. We transform them into percentages of GDP using GDP figures (in current USD) from the World Development Indicators to get a measure of military burden. To test the robustness of our analysis to the choice of our military spending measure, we also use COW and SIPRI data separately. Table A.1 gives information on the name and definition of the remaining confounders, including their sources, and Table A.2 contains the summary statistics.

To anchor our results in the existing literature on domestic political determinants of military spending, we first run a number of standard pooled OLS based on Albalate *et al.* (2012), using the same set of control variables in their panel of democratic countries. This allows us to verify whether military in politics has any affect at all after controlling for institutional factors, in particular government forms and electoral rules. We provide different specifications, according to the combination of dataset (COW or SIPRI), trend and year dummy variables. Our OLS model on government

[3]Level 6, which means low involvement according to the ICRG dataset, is turned into -6, 5 becomes -5 and so on.

military spending takes the following form:

$$lnY_{it} = \alpha MilPol_{it} + \beta Presidential_{it} + \gamma Proportional_{it} + \sum_{m} \delta_m \; lnX_{imt} + \eta Trend + \mu D_i^{Continent} + \epsilon_{it} \quad (1)$$

with $i = 1, \ldots, 135$; m (i.e. the number of control variables) $= 1, \ldots, 5$; $t = 1, \ldots, 26$, where lnY_{it} is the military burden (as a share of GDP); $MilPol$ serves to look at how different levels of military participation in politics affect the military burden; $Presidential$ indicates presidential democracies, where the president is elected directly by the citizens (the opposite category being parliamentary), while $Proportional$ indicates proportional representations (vis-a-vis majoritarian);[4] X is a vector of explanatory variables and δ is the associated coefficient vector; η is the coefficient of the time trend variable, μ is the coefficient of a dummy for Africa, Asia or Europe and υ_{it} is the error term.

The vector of covariates X includes information on GDP per capita, population, intrastate wars,[5] alliances, and emulation, which is the mean defence burden of a country's neighborhood. We transform military burden, GDP per capita, population and emulation into logs to scale down the variance and reduce the effect of outliers. GDP per capita is a measure of wealth. We expect the elasticity of military burden to be positive but not necessarily greater than one. The existing literature is inconclusive on the effect of

[4]Following Albalate *et al.* (2012), we consider all assembly-elected president democracies as parliamentarian.

[5]We are basing the pooled OLS on Albalate *et al.* (2012), who only uses civil strifes. In the next models we also include external wars.

population on the share of military expenditure in GDP. Larger countries tend to be regional or global power and require larger defence forces (Hewitt, 1992). Yet, larger populations might lead to more civil consumption than defence (Dunne & Perlo-Freeman, 2003a). Civil war, the main typology of conflict today, picks up immediate threats. Alliances, a dummy equal to one if a country is part of a military alliance, may have both a negative or positive effect, depending on whether a mutual defence increases free-riding behaviors, or whether a military pact entails minimum levels of spending on security from each member. Finally, the average military spending of neighboring states should have a positive impact since, according to a seminal study by Rosh (1988), threats to security are mostly posed by bordering countries. It can also be thought as a proxy of arms race.

An important problem in any regression analysis is the omission of important explanatory variables correlated with the error terms. In fact, the value of α is likely to be contaminated by endogeneity from uncontrolled confounding variables. In a seminal work on regimes, Lasswell (1941) claims that a permanent level of external threat can create a "garrison state", which increases the willingness and ability of the military to intervene in politics, as well as the popular acceptability of such action. If this level of threat is latent and does not materialise, it is not captured by our war dummies. Including country fixed effects helps to alleviate this issue. We therefore extend Albalate *et al*'s analyses on (democratic) constitutions and include fixed effects in a panel of autocracies and democracies by estimating the

following specification:

$$lnY_{it} = \alpha MilPol_{it} + \sum_{m} \delta_m \; lnX_{imt} + \eta Trend + f_i + \epsilon_{it} \qquad (2)$$

with $i = 1, \; . \; . \; , 135$; $m = 1, \; . \; . \; , 8$; $t = 1, \; . \; .. \; , 26$, where lnY_{it} is the military burden (as a share of GDP); $MilPol$ is again the level of military participation in politics; X is a vector of explanatory variables and δ is the associated coefficient vector; η is a time trend variable; f_i is the country fixed effect and υ_{it} is the error term. Time-invariant covariates (i.e. government forms, electoral rules, regional dummies) are not included because they are perfectly collinear with the country fixed effects. Another difference with the previous specification is the inclusion of three additional covariates: the log of trade (sum of imports and exports) in percentage of GDP, which is a proxy for economic integration, the polity2 variable, which is the most popular measure of a country's level of democracy, and a dummy for military regimes. Trade is a proxy for economic integration: the more open a country is, the more peaceful will be its relationships with other countries, and therefore the less need it has for defence spending. However, the opposite has been argued by Rosh (1988): the level of economic integration captures a dependence on the world market and renders economies more vulnerable to fluctuations in world prices. Therefore, in anticipation of resulting internal dissent, countries may become more militarized with increasing openness. The rationale behind the inclusion of an indicator of the level of democracy and a binary indicator of military regimes is that democracies spend less on defence than do autocratic systems while in military regimes the military's

corporate interests typically entail securing more ample military budgets than in other autocracies (see Bove & Brauner, 2011, for a discussion of regime type and military spending). By including military regimes we also purge the effect of military involvement in politics of any bias associated with the presence of military dictatorships; in doing so, we can assess to what extent intermediate levels of military's political role affect budgetary decisions. Finally, our dummy for war includes both interstate and intrastate conflicts, since they both affect the amount of resources devoted to the security apparatus (Nordhaus *et al.*, 2012).

While the model in equation (2) allows us to address omitted variable bias, it may fail to account for the potential reverse causality between $MilPol$ and the military burden. To tackle this additional source of endogeneity, we reestimate equation (2) by using an IV strategy. Details about the identification strategy and the corresponding estimates are discussed in section 4.1.

4 Results

The main results are presented in Tables 1 - 4. Table 1 provides estimates for alternative versions of the pooled-OLS, Table 2 makes use of fixed effect models and Tables 3 - 4 display the IV estimates. We also run additional models, whose results are meant to provide robustness checks. We briefly discuss them in this section and include them in the appendix.

The baseline model in Table 1 assesses the importance of institutional determinants of defence spending; following Albalate *et al.* (2012), we only

focus on democracies.[6] Before discussing our main explanatory variables, we summarize the results with regard to the control variables. Results are highly consistent with previous research on military spending, which increases the confidence in our main findings. National military spending is affected by the occurrence and severity of conflicts and the spending of enemies and allies i.e. the variables alliances and emulation. The coefficient of log GDP per capita is clearly positive and suggests that richer democratic countries spend relatively more on their security. Our continental dummies are all positive, although Asia and Africa fail to achieve statistical significance in most of the specifications. Previous empirical evidence does not agree on the sign of the effect of population on military burden. Possibly reflecting this disagreement, our coefficients are insignificant.

In line with our priors, we find that the coefficient of military involvement in politics is positive and significant in all our model specifications,[7] where we use either country-specific time trends to capture additional variation (models A-D) or dummy year variables (Model E). Furthermore, military in politics is significant at conventional levels, even if we are controlling for the form of government and the electoral rule (Models B-E). Presidential systems are associated with larger military burden than parliamentary systems, possibly because they are more likely to go to war, or because military spending being a private good, it is manipulated by the incumbent president to obtain re-election. The voting system has also important implications for

[6] Accordingly, a country is considered a democracy when its Polity democracy score is larger than its autocratic score.

[7] Note that we use the continuous original value but reverse it to simplify its interpretation i.e. higher values correspond to higher levels of military intervention in politics.

the size of the defence budget. In particular, the presence of a proportional representation, when candidates are elected based on the percent of votes received by their party, lowers the share of output devoted to defence. Both results, as well as the sign taken by the other control variables, are in keeping with Albalate *et al.* (2012). The power of the legislatures in exercising political control over the armed forces and, in particular, in providing oversight of defence policies, is strongly dependent on the level of the military political role. The value of α, the coefficient of military in politics, is on average 6% across the specifications. Given the log-linearity of the model, the interpretation of α is that of a proportional change in the military burden given a unit change in $MilPol$, holding all else constant. Therefore, a six-point change is estimated to increase the military burden by 36%.

Most of the studies on defence spending, including Albalate *et al.* (2012), use SIPRI data. While our first two models follow this tradition, we lose four years, since our dataset on military involvement starts in 1984, and SIPRI does not provide data before 1988. We therefore extend the dataset using the COW dataset.[8] To provide robustness checks, we estimate the pooled OLS on COW data only (Model C) and on COW and SIPRI data together (COW from 1984 to 1987 and SIPRI from 1988 on, Models D-E). Results do not significantly change.[9] As a final robustness check, we need to recall an

[8]Nordhaus *et al.* (2012) set a precedent for this procedure. Yet, data on military spending are notably subject to error, mainly due to secrecy and differences in definitions. To get a picture of the compatibility of SIPRI and COW data, we examine their ratio. While their mean ratio is close to one, the standard deviation is more than four.

[9]To test the issue of collinearity among the covariates, we calculate the variance inflation factors (VIFs) for the independent variables specified in the linear regression model. The highest mean value when we include all the regressors is lower than 2.2, and therefore we reject this type of problem.

existing disagreement on how to define a democracy: some empirical studies code transitions from an autocracy to a new democracy when there is a movement from < 6 to $>= 6$ in the polity2 score (e.g. Gleditsch & Ward, 2006). Therefore, in the Appendix, we use this alternative threshold, i.e. when the Polity IV is strictly higher than 5. Results are not significantly affected and are shown in Table A.3.

Table 2 reports the relation between military in politics and military burden using a panel regression model with fixed effects; we also control for group-wise heteroscedasticity and serial correlation by reporting robust standard errors clustered on countries. In this model, the time-invariant covariates (institutions, electoral systems, regions) are subsumed and dropped from the regression. Models A to C use the full sample of autocracies and democracies. Since, as mentioned above, the combination of the SIPRI and COW datasets may be problematic, we first run separate regressions on the SIPRI and COW datasets alone (models A and B). Overall, the variables are consistent with recent studies on the determinants of military spending, although the combination of clusters at country level, fixed effects and country-specific time trends makes some of the control variable insignificant at conventional levels. The log of trade is only significant in the first specification; the positive sign confirms earlier findings by Rosh (1988) and Dunne *et al.* (2008). Similarly, the log of population is never significant across our specifications. The inclusion of a linear time trend may account for the insignificance of log population.

The presence of ongoing intrastate and interstate wars has a predictable positive effect on the share of military expenditures. The expenditures of

neighbouring countries, emulation, may be taken as evidence of increased threat that requires more commitment of resources to the military. This can also be regarded as an action-reaction cycle typical of arms races. Table 2 also shows that democracies spend less than autocracies and the magnitude of the effect is quite large. In particular, in model B, 100*(-0.0131) can be interpreted as the percentage decrease in the military burden for a unit increase in the polity2 score (ranging from -10 to +10). Therefore, a ten-point movement decreases our dependent variable by more than 13%, holding all other independent variables constant. Finally, our variable of interest shows a significant positive impact on the military burden, with a coefficient in the range of 0.026-0.042.

Given the important difference between democracies and autocracies, models D-E restrict the sample to dictatorships. When accounting for "regime type", we have so far relied on an index, the polity2, that ranks countries on a scale from perfect democracy to absolute autocracy. This, however, ignores other substantial institutional differences between forms of democracy and autocracy. A number of scholars usually address this shortcoming by using datasets on regime types, such as the one newly compiled by Geddes *et al.* (2012). Our variable, military in politics, achieves significance at conventional level. This means that variations in the institutional role of the military can shape a country's preferences over budgetary issues. Results are robust after controlling for the presence of military regimes (model E), which is the highest form of military access to decision making. A discerning feature of military regimes is the armed forces' effort to protect their corporate interests (Wright & Folch, 2012) and their continuing concern about

professional unity (Geddes, 2003). These features are found to boost military spending. Finally alliances, which include security agreements and carry a commitment for support, are found to positively affect military burden only in autocratic regimes. Overall, our several model specifications corroborate our results.

It may be argued that the relation between $MilPol$ and the military burden is non-linear. To explore this possibility we perform two simple tests: we check whether the difference between consecutive values of military in politics is different from zero irrespective of the starting value. We reject the null of non-linearity, thus suggesting that the relationship is linear. We also create a battery of dummy variables corresponding to the six different levels of military in politics. The pattern of coefficients for the different levels suggest that the relationship is approximately linear i.e. higher levels correspond to higher coefficients.[10]

4.1 IV Strategy

Country fixed effects may reduce any endogeneity resulting from omitted variables. Yet, a positive correlation between the military role in politics and military burden can also arise from causality running both ways. High levels of military intervention in politics may be driven by high levels of military burden. However, note that this particular instance of reverse causality is far from obvious: if anything, we would expect a *negative* impact of military burden on the level of military intervention in politics, in particular on the

[10]For brevity's sake we do not include details of this analysis here, but the results are available upon request from the authors.

likelihood of military regimes, the archetypical form of the military having an active role on the policy process. Military spending is an important tool that state leaders can manipulate to control and get support from the armed forces. Not surprisingly, empirical studies lend support to Huntington's suggestion to give the military "toys" and increased benefits, as they reduce the willingness to undertake a coup d'état, and find a negative relationship between a country's military spending and the probability that it experiences a coup (Nordlinger, 1977; Powell, 2012; Leon, 2012; Brauner, 2012). Recent theoretical models by Acemoglu *et al.* (2010) and Besley & Robinson (2010) also suggest that "efficiency wages" in the form of spending on the military can be used by the elite to prevent military intervention in politics and subsequent regime changes. This means that, if a reverse causality exists, the effect that military in politics has on the military burden will suffer from downward bias due to the reverse negative effect that the latter has on the former.

To improve the robustness of our findings, we implement an instrumental variable procedure by looking for an instrument correlated with the endogenous explanatory variables, i.e. military involvement in politics, conditional on the other covariates, but uncorrelated with the dependent variable, i.e. military burden, other than through its effect on military in politics. To find a suitable candidate we turn to the formal literature on the emergence of military dictatorships and more generally on the military role in politics. We build on Acemoglu *et al*'s (2010) theory, which suggests that military intervention in politics is a consequence of the political moral hazard problem posed by the military when used to prevent a transition to democracy

and relates the emergence of military dictatorships to increasing level of the threat posed to the government by the broader population. While they predict that the likelihood of military intervention should be increasing in income inequality, a number of structural theories in political science explain military intervention as a consequence of, more broadly speaking, "socio-economic conditions".

Finer (1988) argues that the likelihood of military interventions decreases with improved socio-economic development. In fact, socio-economic development is associated with higher urbanisation rates, higher industrialisation and literacy rates, which in turn foster mass participation into social activities and improves the conditions for political mobilisation (Putnam, 1967). Similarly, in an influential study, Londregan & Poole (1990) find that economic factors such as poverty and economic growth have a significant negative effect on the risk of military takeovers. Considering different time periods and countries, as well as different measures of military intervention, subsequent studies reached similar conclusions. In particular, most of the studies argue that poverty can mobilize state elites, including the military, against executive leaders (e.g. Belkin & Schofer, 2003; Magaloni & Kricheli, 2010). Furthermore, other empirical studies show that social instability, among other things, increases the risk of coups because the military perceives popular uprising as a sign of government weakness and social disorder. In fact, this was the claim of most military leaders in Latin America to legitimate the seize of power aimed at restoring order and promote development.[11]

[11]Consistent with this argument and the historical evidence, Belkin & Schofer (2003)

Therefore, we use a more general indicator of the (potential) level of threat that those excluded from power pose to the incumbent: the socioeconomic conditions indicator from the International Country Risk Guide, a twelve-point scale which assesses "the socioeconomic pressures at work in society that could fuel social dissatisfaction" (Howell, 2011, p.4). The rating assigned is the sum of three subcomponents, each with a maximum score of 4 points i.e. unemployment, consumer confidence and poverty. As with military in politics, we reverse the values to facilitate its interpretation i.e. higher values correspond to higher levels of threat posed by the citizens. While this instrument may not be the ideal one, it has a theoretical foundation and is available across countries and over the entire period.

For the instrument to be valid, we need to rule out any reverse effect of military spending on the instrument. To the best of our knowledge there are no studies on the effect of military spending on socioeconomic conditions. We also try to rule out any effect of the instrument on the dependent variable running through omitted variables by adding country fixed effects to the usual large number of covariates. In fact, we replicate all the columns in Table 2 using an IV strategy and thus controlling for a number of potential indirect channels through the inclusion of eight explanatory variables as well as country-specific linear time trends and country fixed effects. A remaining limitation is the impossibility to exclude possible direct effects from socioeconomic conditions to military burden. While there are neither empirical nor theoretical evidence to suggest a direct channel, we perform a variety of

and Magaloni & Kricheli (2010) find that instability, measured by the annual count of contentious collective actions, is strongly and positively correlated to the likelihood of military takeovers.

tests to verify the reliability of our instrument.

Table 3 reports the IV estimates when the degree of military involvement in politics is instrumented with the level of socioeconomic conditions (SocEcon). At the bottom of Table 3 we show the first-stage estimated coefficients of the instrument along with the customary F-test to verify the relevance of the chosen instrument. As one would expect the level of socioeconomic pressures are strongly and positively correlated with military in politics at 1% level of statistical significance (i.e. high levels of military in politics are associated with high levels of socio-economic pressures). This is in keeping with the argument put forward by Acemoglu *et al* (2010): an increase in the level of threat posed by the broader population increases the importance of the military in the institutions of a country. Our results are robust to the inclusion of country-specific trends and hold in the subsamples of autocracies (models D-E), even when we control for military regimes (model E). Furthermore, F-statistics is always greater than the threshold value of 10. We are interested in the estimated coefficient of military in politics. The size of this coefficient and its level of significance provide encouraging empirical support to our prior. In all specifications, the estimate of military in politics is larger than in Table 2, ranging from 0.110 to 0.290. This suggests a downward bias in the non-instrumented OLS estimate. Finally, most of the coefficients of the control variable take on typical values that are consistent with our previous results and the empirical literature on the demand for military spending.

As we pointed out above, the main factor affecting the chances of military intervention in politics in Acemoglu *et al*'s formal model is the risk of pop-

ular uprising. Deteriorating living standards - i.e. adverse socio-economic conditions - are one of the possible triggers of social unrest. The risk of mass protests is likely to vary in accordance with the level of cohesion within a society and the presence of religious factions. In fact, tensions related to religious differences arise every day in many countries, including those invested by the “Arab Spring". Those tensions are likely to exacerbate the threat against the incumbent government and may motivate the emergence of the military that want to restore order. Therefore, to offer additional proxies of the risk of social unrest, we replicate Table 3 using one additional instrument: the level of religious tensions, taken from the ICRG database. According to the coding rules, religious tensions may stem from the prominent position of a single religious group that seeks to replace civil law by religious law and to exclude other religions from the political and social process within a society. We reverse the scale as before, thus higher ratings correspond to countries where tensions are high because opposing groups are intolerant and unwilling to compromise. As before, we assume that the level of potential threat arising from adverse socio-economic conditions and religious fractionalisation have a indirect impact on military burden through an increase in the level of military involvement in politics. Table 4 reports the IV estimates when military in politics is instrumented by both religious tensions (RelTen) and socio-economic conditions (SocEcon). Results are in keeping with our previous estimates, and the value of the coefficient of interest, $MilPol$, remains within a similar range, (between 0.078 and 0.188). Table 4 also reports the p-value of the Hansen test for overidentifying restrictions. We reject the null hypothesis that the instruments are valid only

in one case, in column B, while in four out of five specifications we can confidently rely on the chosen instruments. Finally, as a further robustness check, we estimate a dynamic version of Models A and B in Tables 3 - 4, where one lagged value of the dependent variable is added on the right hand side of equation 2. As one would expect, the lagged dependent variable is always positive and strongly significant. Overall, with the only exception of column D, the coefficients of $MilPol$ remain strongly significant, and are also similar in magnitude to those estimated using the instrumental variables. To sum up, the IV strategy mitigates the issue of endogeneity and provides safer estimates of the impact of military in politics on the share of defence spending.

Beyond statistical significance, we illustrate the implied substantive effects of our results with regards to the IV strategy, which, we believe, is the most reliable given the endogeneity issue. Taken together, Tables 3 - 4 can offer lower and upper bound estimates of the effect of military in politics on the military burden. A one-unit increase in $MilPol$ will produce an estimated increase in the military burden in the range of 7.8% to 29%, holding all else constant. We provide a simple example where casual evidence suggests that, by improving the military's direct access to policy-making, an higher military involvement in politics increases the share of military spending. After Mubarak was outsted in 2011, the Egyptian military formed an interim government. However, keen to protect its privileged position in society, it has proved reluctant to hand over power to civilians and repeatedly postponed elections. In June 2012, the ruling generals dissolved the parliament and substantially increased their power. Few months later, the Egypt's

military council approved the 2012/13 state budget allocation for Egypt's military, which was set to rise by US$0.5 billion.[12] While we do not have information on the level of military involvement after 2009, our data show that Egypt experienced the biggest increase in the degree of $MilPol$ between 1985 and 1986, when it moved from -2 to -1.25, i.e., a 0.75 unit increase. The military burden increased from 11.94 % to 14.54 % of the GDP in 1986, a 22% increase, in line with the upper bound of the estimated range.[13]

5 Conclusions

In this paper we examine how the level of military involvement in politics affect military's chances to redistribute resources towards their members through the manipulation of the country's defence burden. In particular, we claim that not only are the armed forces central in bringing about institutional change, but the extent to which they intervene in policy-making is important in explaining why and how much military burden differs across countries. We use a variety of econometric specifications, including pooled OLS, panel data with fixed effects and IV estimates. Our empirical results confirm a degree of variance in the behaviour of democratic and authoritarian regimes in allocating money to the armed forces, according to the level of engagement of the military in policy-setting. Using widely accepted models of military spending, we show the relevance of political relationships

[12]See "Egypt military budget allocations to reach LE31 bn in 2013/14", source `english.ahram.org.eg/News/72493.aspx?`, accessed January 15 2014

[13]Another interesting example is Brazil, which moved from -4.8 to -4 between 1993 and 1994, i.e., a 0.8 unit increase, the biggest yearly increase in its history. Military spending moved from 1.9 % to 2.1% of the GDP, an 8% increase, very close to the lower bound estimate.

to patterns of defence spending as share of GDP. High levels of military engagement in policy-making are found to increase the military's chances for acquiring more resources and to cause more generous allocations to the armed forces. Our study sheds light on the influence of institutional actors in allocative decisions by explicitly accounting for the influence of these actors and represents a further step in the development of a better understanding of the role played by domestic political interests in determining public policies. More broadly, this study also suggests that future research should attempt to look for similar dynamics in other branches of the government. While we focus specifically on the military, similar scenarios may be expected in other organizations. The allocation of resources in other areas, e.g. education, health or transports, may be impacted by bureaucratic politics in a similar way. An understanding of the importance of the military apparatus in policy-setting can help to refine how institutions and economic outcomes interact.

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Table 1: Pooled OLS (democracy if Polity2 $>$ 0)

	Model A	Model B	Model C	Model D	Model E
MilPol	0.0658***	0.0525**	0.0626***	0.0596***	0.0588**
	(0.0246)	(0.0246)	(0.0220)	(0.0223)	(0.0232)
lGDPpc	0.0705**	0.0773**	0.0356	0.0754**	0.0631*
	(0.0340)	(0.0332)	(0.0352)	(0.0334)	(0.0319)
lpop	0.0162	0.0309	0.0458	0.0395	0.0356
	(0.0311)	(0.0278)	(0.0281)	(0.0270)	(0.0264)
intrastate	0.192**	0.235**	0.252**	0.242***	0.234***
	(0.0851)	(0.0903)	(0.105)	(0.0865)	(0.0857)
alliances	0.127	0.144*	0.0793	0.118	0.123
	(0.0819)	(0.0856)	(0.0919)	(0.0844)	(0.0843)
lemulation	0.451*	0.497*	0.333	0.449*	0.610*
	(0.252)	(0.271)	(0.241)	(0.261)	(0.318)
Africa	0.145	0.171	0.268*	0.202	0.120
	(0.143)	(0.149)	(0.141)	(0.141)	(0.154)
Asia	0.214	0.139	0.253*	0.155	0.117
	(0.139)	(0.129)	(0.139)	(0.123)	(0.132)
Europe	0.146	0.238**	0.430***	0.248**	0.246**
	(0.0967)	(0.111)	(0.117)	(0.103)	(0.116)
trend	-0.0134**	-0.0104*	-0.0143**	-0.00812	
	(0.00564)	(0.00550)	(0.00575)	(0.00573)	
presidential		0.138	0.212**	0.136*	0.139*
		(0.0845)	(0.0932)	(0.0819)	(0.0816)
proportional		-0.129	-0.142*	-0.133*	-0.129
		(0.0819)	(0.0793)	(0.0789)	(0.0791)
Year dummies	no	no	no	no	yes
Dep var source	Sipri	Sipri	Cow	Cow+Sipri	Cow+Sipri
Sample	Democracies	Democracies	Democracies	Democracies	Democracies
Number of clusters	101	95	98	99	99
N	1559	1,437	1,606	1626	1626

Standard errors in parentheses are clustered at country level

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

SIPRI (1988-2009). COW (1984-2009). Model E: COW(1984-1987) + SIPRI(1988-2009)

Table 2: Panel Data Fixed Effects

	Model A	Model B	Model C	Model D	Model E
MilPol	0.0355***	0.0214	0.0260*	0.0416**	0.0424**
	(0.0117)	(0.0168)	(0.0136)	(0.0187)	(0.0180)
lGDPpc	0.114	-0.317**	0.156*	0.104	0.0770
	(0.0729)	(0.154)	(0.0924)	(0.114)	(0.111)
lpop	0.0986	0.0881	0.0710	-0.0877	-0.188
	(0.129)	(0.246)	(0.172)	(0.278)	(0.286)
ltrade	0.124**	0.0207	-0.0659	-0.0679	-0.0354
	(0.0552)	(0.0648)	(0.0617)	(0.0945)	(0.0978)
war	0.0863**	0.150**	0.151**	0.146**	0.106**
	(0.0382)	(0.0664)	(0.0609)	(0.0616)	(0.0510)
alliances	0.0425	-0.106	-0.0171	0.122	0.207***
	(0.0684)	(0.0774)	(0.0871)	(0.0845)	(0.0614)
lemulation	0.189**	0.414***	0.411***	0.302**	0.320***
	(0.0779)	(0.114)	(0.0968)	(0.119)	(0.101)
polity2	-0.000397	-0.0131**	-0.0103**	-0.00831	-0.00628
	(0.00430)	(0.00536)	(0.00496)	(0.00515)	(0.00520)
trend	-0.0171***	-0.00376	-0.0101**	-0.0119	-0.00988
	(0.00368)	(0.00627)	(0.00413)	(0.00769)	(0.00797)
gwfmilitary					0.476***
					(0.135)
Country FE	yes	yes	yes	yes	yes
Dep var source	Sipri	Cow	Cow+Sipri	Cow+Sipri	Cow+Sipri
Sample	Full	Full	Full	Autocracies	Autocracies
Number of clusters	125	127	127	86	77
N	2,075	2,422	2,451	1163	1028

Standard errors in parentheses are clustered at country level

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

SIPRI (1988-2009). COW (1984-2009). Model C-E: COW(1984-1987) + SIPRI(1988-2009)

Table 3: IV Estimates. (Instrument is SocEcon)

	Model A	Model B	Model C	Model D	Model E
			SECOND STAGE		
MilPol	0.110**	0.290***	0.129**	0.192***	0.117**
	(0.054)	(0.084)	(0.052)	(0.055)	(0.046)
lGDPpc	0.193***	-0.060	0.247***	0.121	0.088
	(0.069)	(0.115)	(0.077)	(0.077)	(0.077)
lpop	0.103	-0.007	0.038	-0.340*	-0.319*
	(0.070)	(0.129)	(0.092)	(0.185)	(0.176)
ltrade	0.125***	-0.021	-0.076**	-0.096	-0.056
	(0.031)	(0.054)	(0.039)	(0.060)	(0.057)
war	0.048	-0.012	0.092**	0.070	0.068*
	(0.033)	(0.059)	(0.038)	(0.043)	(0.040)
alliances	0.051	-0.068	-0.008	0.169***	0.242***
	(0.041)	(0.061)	(0.044)	(0.057)	(0.050)
lemulation	0.151**	0.211**	0.329***	0.207**	0.257***
	(0.061)	(0.101)	(0.070)	(0.082)	(0.079)
polity2	0.004	0.002	-0.004	-0.005	-0.004
	(0.004)	(0.006)	(0.004)	(0.004)	(0.003)
trend	-0.019***	-0.009**	-0.012***	-0.006	-0.007
	(0.002)	(0.004)	(0.003)	(0.005)	(0.005)
gwfmilitary					0.453***
					(0.068)
			FIRST STAGE		
SocEcon	0.064***	0.077***	0.084***	0.143***	0.164***
	(0.016)	(0.014)	(0.014)	(0.022)	(0.022)
F-stat	15.83	29.76	35.11	43.55	56.95
Country FE	yes	yes	yes	yes	yes
Dep var source	Sipri	Cow	Cow+Sipri	Cow+Sipri	Cow+Sipri
Sample	Full	Full	Full	Autocracies	Autocracies
Number of clusters	125	126	126	82	74
N	2,075	2,421	2,450	1159	1025

Standard errors in parentheses are clustered at country level

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

SIPRI (1988-2009). COW (1984-2009). Model C-E: COW(1984-1987) + SIPRI(1988-2009)

Table 4: IV Estimates. (Instruments are SocEcon and RelTen)

	Model A	Model B	Model C	Model D	Model E
			SECOND STAGE		
MilPol	0.111***	0.078**	0.121***	0.188***	0.148***
	(0.025)	(0.031)	(0.026)	(0.036)	(0.033)
lGDPpc	0.194***	-0.263***	0.239***	0.121	0.092
	(0.055)	(0.079)	(0.060)	(0.076)	(0.077)
lpop	0.103	0.068	0.041	-0.334*	-0.373**
	(0.071)	(0.101)	(0.088)	(0.175)	(0.178)
ltrade	0.125***	0.012	-0.076**	-0.096	-0.065
	(0.031)	(0.046)	(0.038)	(0.059)	(0.057)
war	0.047**	0.116***	0.097***	0.072**	0.053
	(0.023)	(0.036)	(0.032)	(0.037)	(0.036)
alliances	0.051	-0.098*	-0.008	0.168***	0.256***
	(0.041)	(0.052)	(0.043)	(0.058)	(0.051)
lemulation	0.151***	0.371***	0.336***	0.210***	0.232***
	(0.053)	(0.074)	(0.059)	(0.077)	(0.074)
polity2	0.004	-0.010***	-0.005	-0.005	-0.003
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)
trend	-0.019***	-0.005	-0.012***	-0.007	-0.006
	(0.002)	(0.003)	(0.002)	(0.005)	(0.005)
gwfmilitary					0.443***
					(0.067)
			FIRST STAGE		
SocEcon	0.045***	0.056***	0.064***	0.109***	0.13***
	(0.016)	(0.014)	(0.014)	(0.021)	(0.021)
RelTen	0.255***	0.294**	0.28***	0.251***	0.248***
	(0.031)	(0.027)	(0.027)	(0.035)	(0.038)
F-stat	40.1	71.35	68.9	44.87	48.61
Hansen-stat p-val	0.991	0.001	0.839	0.930	0.340
Country FE	yes	yes	yes	yes	yes
Dep var sources	Sipri	Cow	Cow+Sipri	Cow+Sipri	Cow+Sipri
Sample	Full	Full	Full	Autocracies	Autocracies
Number of clusters	125	126	126	82	74
N	2,075	2,421	2,450	1159	1025

Standard errors in parentheses are clustered at country level

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

SIPRI (1988-2009). COW (1984-2009). Model C-E: COW(1984-1987) + SIPRI(1988-2009)

Table A.1: Variable definitions and sources

Variable	Definition	Source
Ln milex	Military Spending (% of GDP)	Stockholm International Peace Research Institute (SIPRI) (from 1988 to 2009 only) and The Correlates of War project (COW) (http://www.correlatesofwar.org/)
MilPol	Degree of military participation in politics. From 0 to 6	International Country Risk Guide dataset (ICRG) (http://www.prsgroup.com/icrg.aspx)
SocEcon	Level of socio-economic pressures. The rating is the sum of three subcomponents: unemployment, consumer confidence and poverty. From 0 to 12	ICRG
RelTen	Level of religious tension. From 0 to 6	ICRG
lGDPpc	log GDP per capita (constant 2000 US$)	World Development Indicators
ltrade	log Trade (% of GDP)	World Development Indicators
lpop	log Total Population (thousands)	COW
war	Dummy if country involved in at least one interstate or intrastate war	UCDP/PRIO Armed Conflict Dataset (http://www.prio.no/Data/Armed-Conflict/UCDP-PRIO/)
alliances	Takes on the value 1 if country belongs to a formal military alliance	COW
emulation	log of regional defense spending (% of GDP) (Countries are grouped into 7 geographical regions, according the World Bank's classification)	Stockholm International Peace Research Institute (SIPRI) (from 1988 to 2009 only) and COW
democracy	Binary indicator of democratic regime	Geddes, Barbara, Joseph Wright and Erica Frantz. 2013. "New Data on Autocratic Breakdown and Regime Transitions" (GWF)
gwf_military	Binary indicator of military regime type (groups military, military-personal, indirect military)	GWF
polity2	Regime authority spectrum on a 21-point scale ranging from -10 to +10	Polity IV Project (Marshall & Jaggers, 2013) (http://www.systemicpeace.org)
proportional	Binary indicator of proportional representation	Database of Political Institutions (Beck, 2000).
presidential	Binary indicator of presidential system	Database of Political Institutions
Africa-Asia-Europe	Continental dummies	Author's own

Table A.2: Summary statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
lburden	overall	1.18	0.55	0.00	4.77	N = 3540
	between		0.52	0.00	3.18	n = 175
	within		0.29	-0.02	3.64	T-bar = 20.22
MilPol	overall	-3.83	1.76	-6.00	0.00	N = 2918
	between		1.64	-6.00	0.00	n = 137
	within		0.79	-6.00	0.21	T-bar = 21.30
lGDPpc	overall	7.61	1.62	4.09	10.94	N = 3464
	between		1.57	4.82	10.54	n = 170
	within		0.21	6.27	8.69	T-bar = 20.4
lpop	overall	9.09	1.70	3.78	14.10	N = 3259
	between		1.85	3.81	14.01	n = 175
	within		0.14	8.42	9.73	T = 18.7
ltrade	overall	4.23	0.59	0.48	6.13	N = 3465
	between		0.54	1.27	5.87	n = 172
	within		0.23	2.47	5.15	T-bar = 20.14
war	overall	0.25	0.44	0.00	1.00	N = 3540
	between		0.36	0.00	1.00	n = 175
	within		0.24	-0.70	1.22	T-bar = 20.22
alliances	overall	0.73	0.44	0.00	1.00	N = 3540
	between		0.41	0.00	1.00	n = 175
	within		0.18	-0.23	1.61	T-bar = 20.22
gwfmilitary	overall	0.05	0.23	0.00	1.00	N = 3156
	between		0.16	0.00	1.00	n = 146
	within		0.17	-0.60	1.02	T-bar = 21.61
polity2	overall	2.66	7.00	-10.00	10.00	N = 3272
	between		6.34	-10.00	10.00	n = 156
	within		3.36	-13.53	15.35	T-bar = 20.97
proportional	overall	0.63	0.48	0.00	1.00	N = 2669
	between		0.48	0.00	1.00	n = 157
	within		0.14	-0.31	1.57	T-bar = 17
presidential	overall	0.57	0.50	0.00	1.00	N = 3458
	between		0.46	0.00	1.00	n = 170
	within		0.19	-0.38	1.41	T-bar = 20.34
SocEcon	overall	-5.80	2.22	-11.00	-0.50	N = 2918
	between		1.86	-10.43	-1.90	n = 137
	within		1.26	-10.38	-0.54	T-bar = 21.29
RelTen	overall	-4.54	1.36	-6.00	0.00	N = 2918
	between		1.16	-6.00	-0.88	n = 137
	within		0.68	-7.43	-1.38	T-bar = 21.29

Table A.3: Pooled OLS (democracy if Polity2 $>$ 5)

	Model A	Model B	Model C	Model D	Model E
MilPol	0.0760***	0.0569**	0.0720***	0.0629**	0.0608**
	(0.0284)	(0.0283)	(0.0254)	(0.0259)	(0.0263)
lGDPpc	0.0783**	0.0841**	0.0590	0.0859**	0.0749**
	(0.0357)	(0.0345)	(0.0363)	(0.0347)	(0.0327)
lpop	0.0143	0.0330	0.0494*	0.0422	0.0375
	(0.0340)	(0.0290)	(0.0264)	(0.0279)	(0.0271)
intrastate	0.217**	0.273**	0.267**	0.278***	0.277***
	(0.102)	(0.106)	(0.118)	(0.0997)	(0.0981)
alliances	0.137	0.159*	0.105	0.148*	0.153*
	(0.0908)	(0.0914)	(0.0919)	(0.0893)	(0.0893)
lemulation	0.369	0.432	0.283	0.392	0.554
	(0.289)	(0.289)	(0.246)	(0.272)	(0.336)
Africa	0.222	0.236	0.330**	0.279*	0.192
	(0.152)	(0.156)	(0.148)	(0.154)	(0.169)
Asia	0.211	0.0954	0.169	0.104	0.0649
	(0.152)	(0.137)	(0.143)	(0.131)	(0.140)
Europe	0.132	0.226*	0.352***	0.240**	0.235*
	(0.102)	(0.118)	(0.107)	(0.110)	(0.120)
trend	-0.0139**	-0.0101*	-0.0113*	-0.00676	
	(0.00619)	(0.00585)	(0.00573)	(0.00619)	
presidential		0.139	0.176*	0.146	0.154*
		(0.0929)	(0.0911)	(0.0905)	(0.0892)
proportional		-0.153*	-0.158*	-0.147*	-0.143*
		(0.0869)	(0.0805)	(0.0827)	(0.0822)
Year dummies	no	no	no	no	yes
Dep var source	Sipri	Sipri	Cow	Cow+Sipri	Cow+Sipri
Sample	Democracies	Democracies	Democracies	Democracies	Democracies
Number of clusters	93	88	89	91	91
N	1352	1,265	1,406	1426	1426

Standard errors in parentheses are clustered at country level

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

SIPRI (1988-2009). COW (1984-2009). Model E: COW(1984-1987) + SIPRI(1988-2009)

Table A.4: IV Estimates. (Instruments are SocEcon (A-B) or SocEcon and RelTen (C-D))

	Model A	Model B	Model C	Model D
	SECOND STAGE			
MilPol	0.115**	0.233***	0.057**	0.019
	(0.053)	(0.087)	(0.023)	(0.026)
lGDPpc	0.163**	0.085	0.103**	-0.121*
	(0.065)	(0.105)	(0.047)	(0.062)
lpop	0.011	-0.092	0.015	-0.010
	(0.065)	(0.102)	(0.057)	(0.073)
ltrade	0.045*	-0.026	0.035	0.001
	(0.026)	(0.044)	(0.022)	(0.036)
war	-0.009	-0.081	0.015	0.035
	(0.026)	(0.052)	(0.016)	(0.023)
alliances	0.046	-0.013	0.038	-0.041
	(0.035)	(0.051)	(0.032)	(0.042)
lemulation	0.070	-0.053	0.099**	0.081
	(0.053)	(0.087)	(0.043)	(0.055)
polity2	0.006*	0.009*	0.003	-0.003
	(0.004)	(0.005)	(0.002)	(0.002)
trend	-0.009***	-0.006*	-0.006***	-0.002
	(0.003)	(0.003)	(0.002)	(0.002)
Lag1lburden	0.581***	0.625***	0.615***	0.659***
	(0.053)	(0.037)	(0.043)	(0.032)
	FIRST STAGE			
SocEcon	0.052***	0.062***	0.039***	0.044***
	(0.015)	(0.015)	(0.015)	(0.014)
RelTen			0.207***	0.281***
			(0.031)	(0.028)
F-stat	11.51	17.75	26.09	57.39
Hansen-stat p-val			0.141	0.001
Country FE	yes	yes	yes	yes
Dep var source	Sipri	Cow	Sipri	Cow
Sample	Full	Full	Full	Full
Number of clusters	125	125	125	125
N	1950	2279	1950	2279

Standard errors in parentheses are clustered at country level

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

SIPRI (1988-2009). COW (1984-2009)